REMARKS

This is in response to the Office Action dated September 8, 2004 in which all of pending claims 1-20 were rejected. With this Amendment, claims 1, 3, 4, 6, 12, 14 and 15 are amended. Claims 2,5 and 13 are cancelled. Claims 1, 3, 4, 6-12 and 14-20 are presented for reconsideration and allowance.

In section 2 of the Office Action, claims 1, 4, 6, 9, 10, 19 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gray et al. (U.S. Patent No. 4,567,591) in view of Uehara et al. (U.S. Patent No. 3,873,777). In support of the rejections, the Office Action cited the digital audio satellite transmission system of Gray as teaching the recited encoders for encoding of multiple audio channels, multiplexers for multiplexing of audio channels and modulators for modulation of audio channels. The Office Action states however that Gray fails to explicitly teach first and second layers of multiplexers, but that Uehara teaches this limitation.

In section 3 of the Office Action, claims 2, 3, 5, 7, 8 and 11-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gray and Uehara, further in view of Kostreski et al. (U.S. Patent No. 5,651,010). In this section, the Office Action states that Gray and Uehara fail to teach modulation of video signals on one of a plurality of radio frequency (RF) carriers, but cites Kostreski for teaching this limitation. It is respectfully submitted that, in view of the amendments to independent claims 1 and 12, the pending claims are allowable over the cited references. The following discussion illustrates that fact.

Claim 1 is directed to a passenger entertainment system for use in distributing audio and video channels to passenger entertainment stations on an aircraft. In contrast, the cited references do not teach or suggest a passenger entertainment system on an aircraft as recited. Instead, Gray teaches a digital audio satellite transmission system. Uehara teaches a signal transmission system which transmits a plurality of series of signals through a transmission path, but in a manner which is different than that used in the claimed invention and not in a passenger entertainment system. Kostreski teaches a method of wireless distribution of programming information, but again in a manner which is different than that used in the claimed invention and not in a passenger entertainment system. To further distinguish the pending claims from these cited references based upon the fact that the present invention is directed to a passenger entertainment system for use in distributing audio and video channels on an aircraft, claim 1 is amended to

recite that the data network, video system, digital encoding circuitry, first and second layers time division multiplexers, and modulation circuitry are all positioned on the aircraft.

The fact that the cited references do not teach or suggest passenger entertainment systems is not the only distinguishing difference between the claimed invention and these references. However, this fact simply further highlights the differences. The present invention addresses the difficulties faced in providing an aircraft entertainment system which provides distribution of a large number of independent audio channels, but which is compatible with the techniques used in commonly existing aircraft video distribution systems. Existing aircraft video distribution systems commonly modulate each of a number of video channels on a different RF carrier frequency, and transmit these modulated RF carrier signals across a data network on the aircraft. It is beneficial to provide a large number of independent audio channels, over the same data network, for use by the large number of passengers. However, providing a large number (for example 300) of independent audio channels in this manner (i.e., modulating the individual audio channels on different RF carrier frequencies as is done with the video signals) requires more bandwidth than is typically available. The present invention addresses this problem, while the disclosures of the cited patents do not, either alone or in combination.

Referring more specifically to claim 1, as amended this claim recites a data network and a video system on an aircraft which modulates each of a plurality of video channels on one of a plurality of different RF carrier signals, and transmits the plurality of video modulated RF carrier signals to the passenger entertainment stations over the data network. In combination with this, digital encoding circuitry and first and second layer time division multiplexers are recited. As recited, these components together generate a composite data stream containing a multiplicity of digital audio channels. Also in combination, modulation circuitry on the aircraft modulates a first RF carrier signal with the composite data stream to generate an audio modulated RF carrier signal and transmits the audio modulated RF carrier signal over the data network with the plurality of video modulated RF carrier signals from the video system. This combination of claim limitations overcomes the aforementioned difficulty, and is neither taught nor suggested by a combination of the cited references. A combination of the cited prior art reference does not result in such a system where a large number of audio channels modulate a single RF carrier signal, while each video signal is modulated on a different RF carrier signal. Independent claim 1 is therefore believed to be

in condition for allowance. While dependent claims 3, 4, and 6-11 are also believed to contain additional limitations which are neither taught nor suggested by the recited combination of references, these dependent claims are also believed to be in condition for allowance based at least upon their dependence from patentable independent claim 1.

Independent claim 12 is similar to independent claim 1, but is directed to a method of distributing audio channels to passengers of an aircraft. Specifically, independent claim 12 recites steps of "digitally encoding a multiplicity of audio channels into a corresponding multiplicity of digital audio channels," "combining each of different pluralities of the digital audio channels in the multiplicity of digital audio channels into a different sub-channel having a data rate higher than a data rate of the digital audio channels," and "combining the different sub-channels into a composite data stream having a data rate higher than the data rate of the sub-channels." Then, independent claim 12 recites the step of "modulating a first radio frequency (RF) carrier signal with the composite data stream to generate an audio modulated RF carrier signal." As discussed above, in combination with the steps which result in the modulation of the first RF carrier signal with the composite data stream (which includes the multiplicity of digital audio channels), independent claim 12 recites the step of "modulating each of a plurality of video channels on a different one of a plurality of RF carrier signals to generate a plurality of video modulated RF carrier signals." Finally, independent claim 12 recites the step of "transmitting the audio modulated RF carrier signal and the plurality of video modulated RF carrier signals to passenger entertainment stations on the aircraft over a data network on the aircraft, the data network coupling audio and video modulating circuitry on the aircraft to the passenger entertainment stations." It is respectfully submitted that, for reasons similar to those described above, the combination of steps recited in independent claim 12 is neither taught nor suggested by the cited references, and is therefore believed to be in condition for allowance. While dependent claims 14-20 are also believed to contain additional limitations which are neither taught nor suggested by the recited combination of references, these dependent claims are also believed to be in condition for allowance based at least upon their dependence from patentable independent claim 12. Reconsideration and allowance of all pending claims are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 18-1722.

Respectfully submitted,

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